

Larisa I. Avens

Research Fishery Biologist
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National Marine Fisheries Service
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Education

Ph.D. in Biology	May, 2003	University of North Carolina - Chapel Hill Dissertation: <i>Homing behavior, navigation, and orientation in juvenile sea turtles.</i>
B.S. in Biology	May, 1995 Aug.- Dec., 1993	University of Wisconsin - Stevens Point <i>Study abroad:</i> Macquarie University, Sydney, Australia. Study in Fiji, Australia, and New Zealand, with emphasis on the environmental problems of the South Pacific.

Research and Work Experience

2003-present	Research Fishery Biologist, National Marine Fisheries Service <i>Project description:</i> Collection, histological processing, and analysis of sea turtle skeletal elements for skeletochronological research and stable isotope studies to investigate age and growth. In-water sampling of sea turtles to investigate site fidelity, growth, tag retention, and population health, sex ratios, and genetics.
1997-2003	Ph.D. dissertation research, University of North Carolina - Chapel Hill <i>Project description:</i> A study of homing behavior of juvenile loggerhead and green sea turtles using laboratory orientation trials, mark-recapture experiments, and radio telemetry, as well as an investigation of the cues used by the turtles to orient and navigate during homing behavior.
1998-2003	Biological Technician and Student Cooperative Research position, National Marine Fisheries Service <i>Project description:</i> Assisted with large-scale effort to obtain data describing the distribution, abundance, and demography of sea turtles in the inshore waters of North Carolina. Additional experience involved collection and processing of histological

samples to age loggerhead and Kemp's ridley sea turtles, aerial surveys to document the distribution of sea turtles and cetaceans, and live capture and radio telemetry of bottlenose dolphins.

1996-1997

Research assistant, University of North Carolina - Chapel Hill
Project description: Evaluation of the role of magnetic orientation in the migration of hatchling and adult loggerhead sea turtles (*Caretta caretta*). Assessment of hatchling loggerhead and hatchling green (*Chelonia mydas*) sea turtle responses to rotational displacements in order to examine mechanisms used by the turtles to counteract turbulence during their offshore migrations.

1994 & 1995
(May-September)

Biological Technician, U.S. Fish & Wildlife Service
Cape Island, Cape Romain National Wildlife Refuge, SC
Project description: Population management and habitat restoration for South Carolina's largest nesting population of loggerhead (*Caretta caretta*) sea turtles and participation in the Sea Turtle Stranding and Salvage Network.

Teaching Experience

1995-1997

Teaching Assistant, University of North Carolina - Chapel Hill Biology Department
Physiology: (September, 1997 – May, 2000) Conducted laboratory classes involving experimental study of physiology. Also used BIOPAC physiology software to non-invasively investigate skeletal and cardiac muscle function and respiration in students.
Cell & Developmental Biology: (September, 1995 - May, 1997) Conducted recitation sections involving lectures on the subject material, demonstrations, and reviews of information covered during the main lectures.

Publications

Avens, L. and Goshe, L. R. (2007). Comparative skeletochronological analysis of Kemp's ridley (*Lepidochelys kempi*) and loggerhead (*Caretta caretta*) humeri and scleral ossicles. *Mar. Biol.* **152**:1309-1317

Avens, L. and Lohmann, K. J. (2004). Navigation and seasonal migratory orientation in juvenile sea turtles. *J. exp. Biol.* **207**:1771-1778

Avens, L. and Lohmann, K. J. (2003). Use of multiple orientation cues by juvenile loggerhead sea turtles (*Caretta caretta*). *J. exp. Biol.* **206**:4317-4325

- Avens, L.,** McNeill, J., Epperly, S. P., and Lohmann, K. J. (2003). Site fidelity and homing behavior in juvenile loggerhead sea turtles (*Caretta caretta*). *Mar. Biol.* **143**:211-220
- Avens, L.,** Johnson, S., Wang, J., Dukes, P., and Lohmann, K. J. (2003). Responses of hatchling sea turtles to rotational displacements. *J. Exp. Mar. Biol. Ecol.* **288**:111-124
- Epperly, S., **Avens, L.,** Garrinson, L., Henwood, T., Hoggard, W., Mitchell, J., Nance, J., Poffenberger, J., Sasso, C., Scott-Denton, E., and Yeung, C. (2002). Analysis of sea turtle bycatch in the commercial shrimp fisheries of southeast U.S. waters and the Gulf of Mexico. NOAA Technical Memorandum NMFS-SEFSC-490
- Snover, M. L., **Avens, L.,** Hohn, A. A. (2007). Estimating growth rates in loggerhead sea turtles (*Caretta caretta*) from skeletal growth marks. *Endangered Species Research* 3:95-104
- Sasso, C. R., Braun-McNeill, J., **Avens, L.,** and Epperly, S. P. (2006). Effects of transients on estimating survival and population growth in loggerhead sea turtles. *Mar. Ecol. Prog. Ser.* 324:287-392.
- Sasso, C. R., Braun-McNeill, J., **Avens, L.,** and Epperly, S. P. (2007). Population estimates of loggerhead turtles in the sounds of North Carolina. *Southeastern Naturalist* 6:365-369
- Braun-McNeill, J., Epperly, S. P., Owens, D. W., **Avens, L.,** Williams, E., Harms, C. A. (2007). Seasonal reliability of testosterone radioimmunoassay (RIA) for predicting sex ratios of juvenile loggerhead (*Caretta caretta*) turtles. *Herpetologica* 63:275-284
- Stamper, M. A., Harms, C. A., Epperly, S. P., Braun-McNeill, J., **Avens, L.,** Stoskopf, M. (2005). Relationship between barnacle epibiotic load and hematologic parameters in loggerhead sea turtles (*Caretta caretta*), a comparison between migratory and residential animals in Pamlico Sound, North Carolina. *J. Zoo and Wild An. Med.* 36:635-641

Presentations

- 2007 **Avens, L.,** Goshe, L. R., and Taylor, J. C. *Oral presentation:*
Skeletochronological analysis of age for leatherbacks in the western north Atlantic.
- Goshe, L. R., **Avens, L.,** Hohn, A. A., and Bybee, J. *Poster presentation:*
Comparison of histological processing methods for Skeletochronological analysis.

Abstracts in: Proceedings of the 27th International Symposium on Sea Turtle Biology and Conservation, Myrtle Beach, SC, Feb. 24-28.

- 2006 Snover, M. L., **Avens, L.**, and Hohn, A. A. *Poster presentation:* Using skeletal growth marks to back-calculate carapace lengths in loggerhead sea turtles (*Caretta caretta*).
- Harms, C. A., Braun-McNeill, J., Kelly, T. R., **Avens, L.**, Stamper, M. A., Mihnovets, A. N., Goshe, L. R., Goodman, M. A., Hohn, A. A., and Godfrey, M. H. *Poster presentation:* Consistencies between years in seasonal variation of hematology and plasma biochemistry values of juvenile loggerhead turtles in North Carolina, USA.
- Harms, C. A., Mihnovets, A. N., Braun-McNeill, J., Kelly, T. R., **Avens, L.**, Goodman, M. A., Goshe, L. R., Godfrey, M. H., and Hohn, A. A. *Poster presentation:* Cloacal bacterial isolates and antimicrobial resistance patterns in juvenile loggerhead sea turtles (*Caretta caretta*) in Core Sound, North Carolina, USA.
- Carlson, B. K., Arendt, M., Segars, A., Braun-McNeill, J., **Avens, L.**, Kucklick, J. R., and Keller, J. M. *Poster presentation:* PBDE and organochlorine contaminants in juvenile *Caretta caretta* blood: blood partitioning and temporal and spatial trends.
- Abstracts in:* Proceedings of the 26th International Symposium on Sea Turtle Biology and Conservation, Crete, Greece; April 3-8.
- 2005 Kelly, T. R., Braun-McNeill, J., **Avens, L.**, Godfrey, M. H., Hohn, A. A., Greiner, E., and Harms, C. A. Baseline Health Assessment of in-water juvenile loggerhead sea turtles (*Caretta caretta*) in North Carolina. *Abstract in:* Proceedings of the 25th International Symposium on Sea Turtle Biology and Conservation, Savannah, Georgia; January 16-22.
- 2004 **Avens, L.** and Hohn, A. A. *Poster presentation:* Skeletochronological analysis of Kemp's ridley scleral ossicles. *Abstract in:* Proceedings of the 24th International Symposium on Sea Turtle Biology and Conservation, San Jose, Costa Rica; February 22-28.
- 2003 **Avens, L.** and Lohmann, K. J. *Oral presentation:* Homing, migration, and navigation in juvenile sea turtles. *Abstract in:* Proceedings of the 23rd International Symposium on Sea Turtle Biology and Conservation, Kuala Lumpur, Malaysia; March 17-21.
- 2002 **Avens, L.** and Lohmann, K. J. *Oral presentation:* Use of multiple orientation cues by juvenile loggerhead sea turtles (*Caretta caretta*). *Abstract in:* Proceedings of the 22nd International Symposium on Sea Turtle Biology and Conservation, Miami, Florida; April 3-7.

- 2002 McNeill, J., **Avens, L.**, and Epperly, S. P. *Poster presentation:* Estimated tag retention rates for PIT and Inconel tags in juvenile loggerhead sea turtles.
Abstract in: Proceedings of the 22nd International Symposium on Sea Turtle Biology and Conservation, Miami, Florida; April 3-7.
- 2001 **Avens, L.** and Lohmann, K. J. *Poster presentation:* Seasonal changes in the orientation of juvenile loggerhead sea turtles (*Caretta caretta*) from Core Sound, North Carolina, USA.
Abstract in: Proceedings of the 21st International Symposium on Sea Turtle Biology and Conservation, Philadelphia, Pennsylvania; February 23-28.
- 2000 McNeill, J. B., Epperly, S. P., **Avens, L.**, and Sadove, S. *Poster presentation:* A preliminary analysis of growth data of juvenile loggerhead sea turtles (*Caretta caretta*) from Core Sound, NC, USA.
Abstract in: Proceedings of the 20th International Symposium on Sea Turtle Biology and Conservation, Orlando, Florida; February 27-March 3.
- 1999 **Avens, L.** and Lohmann, K.J. *Poster presentation:* Homing behavior in juvenile loggerhead sea turtles (*Caretta caretta*) from Core Sound, NC, USA.
Abstract in: Proceedings of the 19th International Symposium on Sea Turtle Biology and Conservation, South Padre Island, Texas; March 2-6.
- 1997 **Avens, L.**, Wang, J., Dukes, P., and Lohmann, K. J. *Poster presentation:* Hatchling sea turtle responses to rotational displacements: maintaining a migratory heading in a turbulent ocean.
Abstract in: Proceedings of the 17th International Symposium on Sea Turtle Biology and Conservation, Orlando, Florida; March 4-8.
- 1995 **Avens, L.** *Oral presentation:* Nesting and management of Atlantic Loggerhead sea turtles on Cape Island, SC.
Abstract in: Proceedings of the Wisconsin Academy of Science, Arts, and Letters 125th Annual Conference, Madison, Wisconsin; April 22.

Grants

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| June, 2001 | Recipient of PADI AWARE Foundation grant. |
| June, 2000, 2001 | Recipient of the Lerner-Gray Fund for Marine Research (American Museum of Natural History) |
| June, 2000 | Recipient of Sigma Xi grant in aid of research |
| May, 1998, 1999, 2000 | Recipient of PADI Foundation grant |

May, 1997, 2000, 2002

Recipient of the University of North Carolina at Chapel Hill H.V. Wilson Scholarship to promote marine research

Awards & Activities

2005 – 2007

Served as member and then chair for International Sea Turtle Society Nominations Committee

2005 – 2007

Co-chaired Behavior and Movements session for 26th and 27th Symposia on Sea Turtle Conservation and Biology

2002, 2004 – 2007

Served as reviewer for the following publications: Chelonian Conservation and Biology, Endangered Species Research, Fishery Bulletin, Journal of Herpetology, Journal of the Marine Biological Association of the United Kingdom, Journal of Zoology, Marine Ecology, Marine Ecology Progress Series, Marine Turtle Newsletter, Oryx, and Virginia Journal of Science

2002

Runner-up award for best student oral presentation; 22nd International Symposium on Sea Turtle Biology and Conservation, Miami, Florida.

2001-2004

Member of Sigma Xi, the Scientific Research Society

1999

Runner-up award for best student poster presentation; 19th International Symposium on Sea Turtle Biology and Conservation, South Padre Island, Texas

1997

Runner-up award for best student poster presentation; 17th International Symposium on Sea Turtle Biology and Conservation, Orlando, Florida

1997 – present

Member of the International Sea Turtle Society